

## 2013 Horseshoe Lake – Jones Aquatic Vegetation Control Plan

### LDWF, Inland Fisheries

1. Waterbody type – Impounded oxbow lake of Bayou Bartholomew, levee construction forming current lake completed in 1972 (Figure 1)



Figure 1. Aerial Photo of Horseshoe Lake – Jones

2. Age and condition of control structure (if applicable) – completed 1972, poor condition, last operated in 2009, probably inoperable
3. Type of control structure – concrete drop box spillway (width = 5 ft.) with 4 ft. manually operated slide gate (Figure 2)



**Figure 2. Horseshoe Lake control structure.**

4. Water level range (MSL) – Pool stage = 99.0 ft, annual fluctuation typically < 2.5 ft.
5. Surface area – 130 acres, no significant change with annual fluctuation
6. Average depth – 8 ft.
7. Watershed ratio – unknown, small, < 10:1
8. Drawdown potential of structure – appears to only be 5 ft. from pool stage, structure may be silted in
9. Waterbody Board or Lake Commission – Horseshoe Lake at Jones Lake Commission.  
Currently, there are only 2 “active” members on the commission. The Morehouse Parish Police Jury assumes complete authority when there is not a full and active lake commission.
  - a. Creation / Nomination – Lake Commission members are nominated by the Morehouse Parish Police Jury; MPPJ phone: (318) 281-4132.
  - b. Lake commission contact information – Scott Travis, 12799 5<sup>th</sup> St., Bonita, LA or Lester Langley, 17402 Wilmot Hwy., Bonita, LA
  - c. Procedure for spillway openings – structure is owned and operated by the Morehouse Parish Police Jury. The Police Jury has not been able to produce any documents concerning the procedures for opening the control structure.

DRAWDOWN HISTORY				
Date Opened	Date Closed	Purpose	Results	Issues
None documented				

#### Significant stakeholders and needs/concerns

- Farmers – limited agricultural irrigation (Bayou Bonne Idee is the primary water source for irrigation in this area)
- Home and camp owners (very few) – stable water levels, vegetation control, aesthetics

#### History of aquatic vegetation complaints

There have been periodic complaints from homeowners whenever nuisance vegetation has become excessive or is impacting private piers. Most of the historic complaints have been attributed to the floating species, water hyacinth *Eichhornia crassipes*.

#### Controversial issues on the lake

The boat ramp is currently in need of repair. LDWF spray crews cannot launch boats into the lake to treat nuisance vegetation when the lake level is more than 1 ft. below pool stage.

### **Aquatic Vegetation Status:**

#### Current (2012)

An assessment made in July, 2012 revealed the most abundant species to be water hyacinth, though total coverage equaled approximately 1 acre. Minimal amounts of alligator weed *Alternanthera philoxeroides* and water primrose *Ludwigia sp.* were also found in various areas along the shoreline, though they were not at problematic levels. Submerged vegetation has been scarce, most likely due to planktonic turbidity, which reduces light penetration.

#### Collective coverage and status of beneficial plant species and any considered or implemented efforts to re-establish:

Coverage of beneficial vegetation is considered to be minimal at this time. It was not known if submerged vegetation was present in the lake due to lack of low-water access. There are no planned efforts for establishment of beneficial vegetation.

#### Vegetation predictions for 2013:

Water hyacinth will most likely require control with herbicide. No other species are expected to reach nuisance levels.

### **Limitations:**

- Factors that may limit the effectiveness of chemical, mechanical, or biological control

methods for the aquatic plant problems found in the waterbody.

- Agricultural irrigation may preclude the use of certain herbicides
  - Water control structure may not be functional
  - Small watershed may prolong drawdowns
  - Infrequent flooding from adjacent Bayou Bartholomew may limit the use of grass carp as a control option for submerged vegetation
- Regulatory or public factors or anything else that may limit the ability of LDWF to control aquatic plant problems in the waterbody.
    - Application of the herbicide 2,4-D would require a waiver from LDAF between March 15 - September 15.

## **Past Control Measures:**

### Historic

Applications of commonly used aquatic herbicides (2,4-D, diquat dibromide, and glyphosate) have been made by LDWF in custom spray boats primarily for the control of water hyacinth at the respective rates of 0.5 gal./acre, 1 gal./acre, and 0.75 gal./acre. In the past, applications were made when infestations of nuisance vegetation became abundant in the lake.

### Recent

Water hyacinth has been the primary nuisance vegetation species in the lake in recent years. Normally, one to three treatments per year have been sufficient to maintain it at minimal levels. No herbicide treatments were necessary in 2011, though a total of 44 acres were treated in 2012. Glyphosate or 2,4-D (except 3/15 – 9/15) have been used for water hyacinth control at rates of 0.75 gal/acre and 0.5 gal/acre, respectively.

## **Typemap:**

No detailed type maps have been performed on Horseshoe Lake in Jones

## **Recommendations:**

Monthly surveys will be performed by LDWF spray crews during the growing season to determine whether herbicide application is necessary. Spray crews will be equipped to treat water hyacinth or any other nuisance species with significant coverage during the surveys. Crews will be directed to make thorough observations to determine presence of giant salvinia *Salvinia molesta* or common salvinia *S. minima*. Public complaints and requests from the Lake Commission or Police Jury will be investigated as soon as possible and responded to as needed. The following herbicides are to be applied by boat spray crew: diquat dibromide (1 gal./acre) for control of duckweed and other floating or emergent species, glyphosate (0.75 gal/acre) for control of most broadleaf emergent species, and 2,4-D (.5 gal/ acre) for control of water hyacinth outside of the 2,4-D waiver period. Alligator weed will be controlled with Imazapyr (0.5 gal/acre) in undeveloped areas and with Clearcast (0.5 gal/acre) near houses and developed shorelines. LDWF will make a recommendation to the Police Jury for the repair of the boat ramp, since the lake is inaccessible by boat during low water periods.